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ABSTRACT

The author discusses the need for severely handicapped students to acquire basic home living skills, reviews task analysis principles, and provides sample instructional programs. Listed are basic grooming, dressing, domestic maintenance, and cooking skills. A sample task analysis procedure is demonstrated for the skill of brushing teeth. Reported are two studies in which severely handicapped adolescents were instructed in hair brushing and hair washing. Included in five appendixes are data sheets and descriptions of instructional arrangements for washing and brushing hair. (CL)

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An Approximation of an Instructional Model
For Developing Home Living Skills in
Severely Handicapped Students

S. Hamre

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Introduction

Due to a number of recent legislative and judicial actions it is quite probable that in the near future every child of school age in the United States will have direct access to a free public education. In the past, of course, public school administrations reserved the right to deny the access of some kinds of severely handicapped children to direct public school services and reject those children who did not seem to be benefitting from services the public schools had to offer. The reader, of course, will recognize those rejected as children who were too retarded, brain damaged, emotionally disturbed, physically handicapped, behaviorally hindered and/or seriously involved to be considered beneficiaries of educational services.

If, in fact, it becomes law that public schools provide educational services for all severely handicapped children, the public school community will be forced to examine and revise many of its time honored assumptions and practices concerning services provided to these children. That is, public school personnel will be required to become more tolerant of students who look, talk, move and otherwise respond differently than most other students. Public school personnel will be required to revise or add to their objectives of preparing students for college or relatively complex vocational settings. Public school personnel will be required to assume instructional responsibilities in relation to severely handicapped students that they have not assumed with other students.

Public school instructional personnel are now teaching severely handicapped students to read functional words, to perform simple mathematical computations, to speak in sentences, and to perform simulated and actual vocational tasks.

Hopefully, after attending public school from ages 5 to 21, these students will acquire many of the skills in the repertoires of adequately-functioning adults. As adults, they will be expected to live independent or semi-independent lives in a community rather than institutional setting. The skills necessary for adequate survival in a community obviously include more than those related to traditional elementary school academics. Many skills typically acquired in the home (e.g., brushing teeth or brushing hair) and taken for granted by most school personnel must be systematically taught to severely handicapped students. That is, formerly "extra-school" tasks now must be considered an integral part of public school curricula for severely handicapped students. Such programming will necessarily be coordinated with parental instruction for maximum skill development and maintenance in the home environment.

As severely handicapped students become increasingly visible in the community, much of the community's tolerance will be a function of outward appearances. A large part of outward appearance will depend on the degree to which the person can independently perform critical self-care skills. Thus, learning to perform self-care skills is a necessary part of "normalization."

Severely handicapped students who will be living in independent or semi-independent community settings must be able to perform what may be referred to as "home living" skills. Home living skills are an integral part of a broad spectrum of essential community survival skills. Personal hygiene, cleanliness and proper diet all lead to personal, vocational, recreational and social enhancement.

The task of determining the content of a home living skills program which may begin at age 5 and continue through age 21, may seem gigantic to a classroom teacher in that even after content is determined, systematic instructional techniques must be devised to impart the content.

This paper is primarily concerned with attempting to communicate information related to factors to which public school instructional personnel might attend when attempting to prepare severely handicapped students to function as independent adults in a community living setting. More specifically this paper is concerned with home living skills.

For organizational purposes the remainder of this paper will be divided into four parts. Part I consists of an attempt at delineating several basic survival skills, that, if in the repertoire of an individual, would enhance the probability of independent community functioning. Part II consists of an attempt to communicate to the reader several basic task analysis principles. Part III consists of an attempt to communicate an instructional technology or the "how" of instruction; that is, the procedures a teacher might use to impart the content delineated in Part I and II. In Part III two sample instructional programs will be presented in some detail. These programs are presented in an attempt to communicate to the reader several of the basic steps through which a teacher might progress as other home living skills are taught to severely handicapped students. Finally, several basic implications will be presented and discussed briefly in Part IV.

Part I: Basic Home Living Skills

In this section several basic home living skills are delineated. For organizational purposes the specific skills will be grouped as follows:

- Basic Grooming Skills
- Basic Dressing Skills
- Basic Domestic Maintenance Skills
- Basic Cooking Skills

Prior to the specific listing of the various skills, several factors should be noted. First, the list was developed during and after communication with parents, teachers, public school administrators, workshop administrators, vocational rehabilitation counselors, semi-independent residential facility personnel, and other persons concerned with providing severely handicapped students with the skills necessary to function effectively in a community living environment. Second, the list is tentative both in relevance and in comprehensiveness. That is, there are probably skills listed that are considered important to some people now but not to others (e.g., setting, styling hair). In addition,

there are skills that will no doubt be added to the list in the future. Third, the list should be considered suggestive at best. We are not necessarily holding that these skills should be taught in a public school by classroom teachers without regard to parent attitudes, etc. We are only suggesting that it is important that all severely handicapped students be able to perform at the appropriate time and in the appropriate place the listed skills.

Finally, the list is essentially non-cumulative and non-developmental. That is, a student does not necessarily have to know how to correctly wash his own hairbrush prior to learning how to wash his own hair.

Basic Grooming Skills

1. Brushing hair
2. Parting hair
3. Washing hairbrush
4. Washing hair
5. Setting hair
6. Styling hair
7. Brushing teeth
8. Using mouthwash
9. Washing face (and neck area)
10. Treating acne
11. Washing hands
12. Using hand cream and body lotion
13. Cleaning under fingernails
14. Clipping fingernails
15. Filing fingernails
16. Cleaning ears
17. Washing underarm areas
18. Using deodorants
19. Washing feet
20. Cleaning toenails
21. Clipping toenails
22. Washing all critical skin areas with washcloth at sink
23. Taking a bath
24. Taking a shower
25. Shaving face (males)
26. Shaving underarms (females)
27. Shaving legs (females)
28. Menstrual hygiene
 - a. Using sanitary equipment
 - b. Cleansing genitalia
29. Sitting appropriately
30. Standing appropriately
31. Walking appropriately

Basic Dressing Skills

1. Zipping zippers (on front and on the back of clothes)
2. Snapping snaps (on the front and on the back of clothes)
3. Buttoning buttons (on the front and on the back of clothes)
4. Hooking hooks and eyes (on the front and on the back of clothes)
5. Tying ties (on the front and on the back of clothes)
6. Buckling buckles
7. Putting on a garment which opens down the front
8. Putting on garments over the head
9. Putting on pants
10. Putting on socks
11. Putting on shoes
12. Tying shoes
13. Lacing a lace (shoe, lace-front shirt)
14. Straightening own clothes after they are on and/or messed up
15. Matching colors
16. Matching figures (stripes, plaids)
17. Matching types of clothes together
18. Fitting clothes (too large, too small)
19. Dressing appropriately for specific environment (church, work, play)
20. Dressing appropriately for different weather conditions

Basic Domestic Maintenance Skills

1. Cleaning (polishing) shoes
2. Washing clothes by hand
3. Sorting clothes by color before washing
4. Washing clothes by a washing machine
5. Hanging clothes to dry
6. Drying clothes in a dryer
7. Using public laundromat
 - a. Washer
 - b. Dryer
8. Folding flat clothes
9. Hanging clothes on hangers (blouses, shirts, pants)
10. Ironing flat clothes
11. Ironing non-flat clothes
12. Sewing on buttons
13. Mending a tear in a seam or in material
14. Darning a sock
15. Dusting flat and non-flat surfaces
16. Vacuuming a rug
17. Sweeping a floor, using dust pan
18. Wet-mopping a floor
19. Making a bed
 - a. Changing bed linens
20. Doing dishes
 - a. Clearing table
 - b. Scraping dishes
 - c. Washing, rinsing dishes
 - d. Drying dishes
 - e. Putting dishes away

21. Setting a table
22. Using table tools (spoon, fork, knife, cup)

Basic Cooking Skills

1. Using a can opener (hand)
2. Using a bottle opener
3. Setting stove burners to proper temperature
4. Setting a timer on an oven
5. Setting oven temperatures
6. Preparing simple breakfasts
 - a. Toast with butter
 - b. Cold cereal with milk
 - c. Toaster waffle with butter and syrup
 - d. Toaster french toast with butter and syrup
 - e. Frozen orange juice
 - f. Fried egg
 - g. Fried bacon
7. Preparing simple lunches
 - a. Sandwich with lunch meat
 - b. Sandwich with cheese
 - c. Sandwich with filling (egg salad, tuna salad)
 - d. Fruit
 - 1) Canned
 - 2) Fresh
 - e. Milk
 - f. Canned soup (spaghetti, ravioli, etc.)
 - g. Packing a balanced lunch in a bag
 - h. Filling a thermos bottle
8. Preparing simple dinners
 - a. TV dinner
 - b. Canned dinners (beef stew, chili, chop suey, beans 'n franks, etc.)
 - c. Canned vegetable
 - d. Lettuce salad
 - e. Instant mix dessert (pudding, jello)
9. Reading simple instructions on packages and cans
 - a. Temperature
 - b. Added ingredients
 - c. How long to cook
10. Using measuring utensils (cups, spoons)
11. Choosing appropriate foods
 - a. Fattening foods
 - b. Non-fattening foods

Part II: Basic Principles of Task Analysis

In Part II attempts are made to communicate several basic principles of behavioristic task analysis. Perhaps the following quote is appropriate here:

"First, the teacher must specify terminal objectives in behavioristic terms. That is, she must convert the required criterion performance into observable responses.

Second, the teacher must analyze the criterion responses and divide them into a series of less complex responses.

Third, the teacher must arrange the responses she decides are necessary for completion of the terminal response into a series.

Fourth, the teacher must teach or verify the existence of the student's ability to perform each response in the series.

Fifth, the teacher must teach the students to perform each response in the series in serial order.

Sixth, in attempt to delineate successes and failures, the teacher must record student performance during each training phase so that adjustments can be made during the teaching process." (Brown, Bellamy, and Sontag, 1971, p. 3)

Prior to the provision of examples of how principles of task analysis might be used in the instruction of home living skills, several points should be added, reiterated or emphasized.

First, the primary purpose of performing an analysis of an instructional task is to present an easy to hard sequence of demands to a student that maximizes the probability of the student acquiring the skills inherent in the task.

Second, it is often quite difficult to make valid a priori discriminations as to the relative difficulty of components of a particular task. Thus a teacher is often confronted with the responsibility of judging or estimating the serial order of difficulty of task components.

Third, teachers should be aware that some students may be able to perform the more difficult components of certain tasks and not be able to perform the less difficult. Thus, it is usually a good strategy to assess the performance of the student on all tasks.

Fourth, as the stratification of the components of almost all tasks are arbitrary, a teacher must realize that she or he must continue to "slice" or arrange the task so that it becomes easier and easier for the student to perform the correct responses. Thus, a task analysis orientation is not a static phenomenon. It may be necessary to present different analyses to different students as well as different analyses to the same student.

In Part I many different tasks related to home living skills were delineated. Here it is our intention to communicate to the reader how a task delineated in Part I might be analyzed into components. An example of how one of the skills listed in Part I, brushing teeth, might be analyzed is presented below:

A Sample Task Analysis: Brushing Teeth

1. Remove toothbrush and toothpaste from cup
2. Unscrew toothpaste cap
3. Squeeze appropriate amount of toothpaste onto brush
4. Lay toothbrush down
5. Screw cap back on tube
6. Pick up brush in preferred hand
7. Lean over sink
8. Brush in down motion over top teeth from one side of mouth to the other
9. Spit out excess at least once
10. Brush in up motion over bottom teeth from one side of mouth to the other
11. Spit out excess at least once
12. Brush in down motion over back of top teeth from one side of mouth to the other
13. Spit out excess at least once
14. Brush in up motion over back of bottom teeth from one side of mouth to the other
15. Spit out excess at least once
16. Brush back and forth over crowns of top teeth from one side of mouth to the other
17. Spit out excess at least once
18. Brush back and forth over crowns of bottom teeth from one side of mouth to the other
19. Spit out excess at least once
20. Pick up cup
21. Turn on cold water faucet
22. Fill cup with water
23. Rinse mouth with water
24. Spit out excess at least once
25. Pour excess water out of cup into sink
26. Replace cup next to sink
27. Rinse toothbrush in water
28. Turn off cold water faucet
29. Replace brush and paste in cup

Part III: Sample Instructional Programs

In Part III two different instructional programs will be presented. The term instructional program as it is used here refers to the delineation and arrangement of many skills a teacher should have into a systematic, organized sequence of events. Thus, in our view a program should include at least the following:

- A. A rationale - A rationale for the program presented below is the introduction to the paper.
- B. The students - A description of the students is presented below.
- C. An instructional objective - The instructional objectives are delineated in Part I.
- D. A task analysis - Analyses of two tasks of concern are presented below. In addition, a task analysis is described in Part II of this paper.
- E. Instructional materials and arrangement - Both the instructional materials and how the students and materials were arranged in the classroom will be presented below.
- F. Instructional procedures - The term instructional procedure, as it is used here, refers to the behavior the teacher engages in that results in the students acquiring the responses required by the task analysis. The instructional procedures used to teach the students the two sets of skills are delineated below.
- G. Effects of instruction - Presumably, if a teacher engages in activities referred to in A - F above, the students will change in some demonstrable ways. The changes, if any, manifested by the students would then be the results of the program.

Program A: Brushing Hair

Students (Ss): Fifty-four Ss were initially involved in this program; 46 of these 54 Ss performed at criterion under baseline conditions. Thus, 8 Ss remained in the program.

The 8 Ss ranged in CA from 14 to 21 ($\bar{X} = 17.5$) and in MA from 3 to 11 ($\bar{X} = 7$). The most recently obtained IQ scores ranged from estimates below 30 to 54 ($\bar{X} =$ approximately 42). These Ss had been enrolled in public school classes for severely retarded or severely emotionally disturbed Ss from 3 to 16 years ($\bar{X} = 9.5$).

Cumulative records contained such descriptive statements as "trainable retarded," "severely defective," "limited comprehension," "limited memory," "does not participate in any activity except eating."

Task Analysis: The brushing hair task was divided into six sequenced steps:

1. Mess up hair with fingers
2. Pick up brush in preferred hand
3. Look at hair in mirror
4. Start brush at front top of head
5. Brush down through hair around entire head
6. Check brushed hair in mirror

Instructional materials and Arrangements: Teaching was conducted twice weekly during two 45-minute periods in a "home living classroom" in a public school. Instructional responsibilities were shared by a teacher (T) and a student teacher (T). For instructional purposes the 8 Ss were divided into two groups (A & B) of four. The teacher was responsible for Group A and the student teacher was responsible for Group B.

Ss were seated in a semi-circle in front of an 18" x 52" bedroom dresser with a 34" x 40" mirror placed at eye level (See Appendix A). The S on the task was seated directly in front of the mirror (See Appendix A). A hairbrush was placed on the dresser top in front of S.

All initial responses were recorded as correct "+," performance error "P," or order error "O" (response is correct but occurs out of sequence) on data sheets (See Appendix B). Each data sheet contained space for each S's name on the far left column and each of the six steps was listed above vertical columns across the top. The total number of correct responses was recorded at the end of each teaching trial.

Instructional Procedures: Measures of baseline performance and performance during instruction were obtained in the same manner, with only response consequences differing. Baseline measures were obtained as follows:

When S was seated in front of the mirror, T instructed S to "Mess up your hair, then show me how you brush it, S." When S had completely finished, T said, "Thank you" whether or not the response(s) was correct or incorrect and recorded S's performance on each of the six components of the tasks. This procedure was followed until each of the 8 Ss had the opportunity to perform the task without assistance on two occasions.

After baseline measures were obtained, instruction was initiated as follows:

1. T approached the class, seated the Ss behind her and said, "Now I will show you how to brush you hair neatly. Watch very closely, because later I will ask you to do it just like I do."
2. T then modeled the entire sequence, as she verbally labeled the action of each step; e.g., "I mess up my hair," "I look in the mirror," "I brush all around my head." The entire modeling and labeling procedure was then repeated for the group. Before T gave Ss their trials at the task, she explained that if a student brushed as she had shown him, she would tell him what a good job he had done, pat him on the back and/or shake hands with him.
3. Subsequently, T selected one of the four Ss in a group, placed him or her in front of the mirror and said, "Mess up your hair, then show me how you brush it, S." Initially, Ss were given social praise, such as "Great job of looking in the mirror!", "Beautiful brushing!", after each step performed correctly.

4. If an S performed a step incorrectly, T stopped S and said "No, S, do it like this" and modeled the correct response on her own hair. If S then performed correctly, T said "Good." If S again performed incorrectly, T physically primed the correct response while saying "See, you are brushing, S," for example.
5. T then gradually attenuated reinforcement schedule so that S had to perform more and more steps correctly before praise was delivered.
6. The three remaining Ss in the group were instructed to attend to the S receiving instruction. During instruction T periodically posed such questions to the group as, "Where is S looking?", "What is S using to brush her hair?". Ss were praised by T both individually and as a group for good attending to task.

Effects of Instruction: As previously stated, the brushing hair task was divided into six components. The ability of each of the 8 Ss to perform the six steps in the predefined order was measured. Thus, in any given trial a particular S could make from 0-6 correct responses. While individual data is available for each of the 8 Ss only the performance of one S will be graphically depicted here.

During the two trial baseline periods the 8 Ss performed from one to three of the six steps correctly. Subsequently, a criterion was set at four consecutive errorless trials or 24 consecutive correct responses per S. It should be noted that during instruction the total number of steps performed correctly were recorded on individual graphs, while the Ss were present, immediately after the training session. T verbally praised an S for "going up" on the graph. If an S stayed at the level of the previous trial or "went down" on the graph, T urged him or her to "try harder" next time, etc.

All Ss performed at the criterion level. However, individual Ss reached criterion after differing amounts of instruction. That is, the number of instructional trials required before Ss reached criterion ranged from 11 to 18 ($\bar{X} = 14.6$).

Depicted in Figure 1 below is the performance of S-1. As can be discerned from Figure 1, during the baseline period (trials 1 & 2) S-1 performed 3 incorrect and 3 correct responses. At trial 3 instruction was initiated and S-1 reached criterion at trial 17 after 15 teaching trials.

Program B: Washing Hair

Students (Ss): Thirty-nine Ss including 19 males and 20 females (3 groups of 11, 13, and 15) received instruction in the washing hair program. Ss ranged in CA from 14-21 ($\bar{X} = 17.5$); in MA from 3-14 ($\bar{X} = 8.5$); in IQ scores from 35-70 ($\bar{X} = 52.5$); and in years in school from 7-16 ($\bar{X} = 11.5$).

Cumulative records contained such descriptive statements as "aphasic," "autistic," "unable to perform complex tasks with hands," "severely physically handicapped," "cerebral palsied."

Task Analysis: Washing Hair. The washing hair task was analyzed and divided into 36 basic steps. The additional steps are for use with those girls who might need to creme rinse their hair.

1. Secure all supplies (hairbrush, shampoo, towel and creme rinse for girls)
 2. Arrange all supplies next to sink
 3. Pick up brush in preferred hand
 4. Brush through hair all around head
 5. Lay brush next to sink
 6. Turn on hot and cold water faucets
 7. Test water temperature (warm) with fingers
 8. Lean head over sink
 9. Spray over entire head with sprayer (students could choose to use a cup or the running water for rinsing)
 10. Turn off both faucets
 11. While leaning over sink, uncap shampoo
 12. Fill cap with shampoo
 13. Pour capful of shampoo into palm of hand
 14. Lay shampoo cap next to bottle
 15. Using both hands, rub shampoo into hair over entire head
 16. Using both hands, work up lather over entire head
 17. Turn on hot and cold water faucets
 18. Test water temperature (warm) with fingers
 19. Lean head over sink
 20. Spray over entire head with sprayer
 21. Rinse out all soap
 22. Turn off hot and cold water faucets
 23. Pick up shampoo cap
 24. Pour capful of shampoo into palm of hand
 25. Put shampoo cap on bottle
 26. Using both hands, rub shampoo into hair over entire head
 27. Using both hands, work up lather over entire head
 28. Turn on hot and cold water faucets
 29. Test water temperature (warm) with fingers
 30. Lean head over sink
 31. Spray over entire head with sprayer
 32. Rinse out all soap
 33. Turn off hot and cold water faucets (Girls using creme rinse omit steps 34-36 at this point.)
 34. Using both hands, squeeze out excess water from hair
 35. Pick up towel
 36. Rub towel over hair to soak up excess moisture
- Follow steps 34 through 46 for girls using creme rinse
- 34a. Uncap creme rinse
 - 35a. Pour appropriate amount of creme rinse into palm of hand
 - 36a. Using both hands, rub creme rinse into hair over entire head
 37. Put cap on creme rinse
 38. Turn on hot and cold water faucets

39. Test water temperature (warm) with fingers
40. Lean head over sink
41. Spray over entire head with sprayer
42. Rinse out all creme rinse
43. Turn off hot and cold water faucets
44. Using both hands, squeeze out excess water from hair
45. Pick up towel
46. Rub towel over hair to soak up excess moisture

Following the above procedures, wet towels were placed in an automatic dryer in the classroom. Several students were instructed in the operation of the dryer.

Instructional Materials and Arrangement: Teaching was conducted four times per week during 45 minute class sessions. All teaching was conducted by a teacher (T), a student teacher (T), and a teacher aide (T). Due to the relatively long time periods required by the task and the absence of a large number of sinks (2) only two Ss received instruction in a session.

The classroom was divided by a portable room divider and each half was equipped with a 24" x 36" x 64" sink area with faucets for hot and cold water and an attached drainboard. A 28" x 30" x 36" portable cupboard with countertop was placed to the immediate right of the sink (See Appendix C).

Supplies used for washing hair included a plastic bottle of shampoo, a plastic bottle of creme rinse and a bath-size towel. These supplies were located on shelves behind a door of the portable cupboard. Hairbrushes, labeled with each S's name, were placed on a shelf-top to the right of the sink area (See Appendix C).

The S at task stood in front of the sink, while T and the remaining Ss stood around S in the sink area (See Appendix C).

Data sheets, designed for this task, were used for recording each S's initial responses as correct "+," performance error "P," or order error "O" (See Appendix D).

Instructional Procedures: Measures of baseline performance and performance during instruction were obtained in the same manner, with only response consequences differing.

Baseline measures were obtained as follows:

When S was standing in front of a sink T said: "Show me how you wash your hair, S. You may use these supplies (pointing to an open cupboard which contained shampoo, creme rinse and towels)." When S had indicated he or she was finished, T said "Thank you" whether or not S had completed the task correctly. While S was attempting to complete the task T was recording the number of correct responses made on a data sheet.

This procedure was followed until each of the 39 Ss had one opportunity to wash their hair without assistance (time prevented gathering more baseline data).

After baseline measures were obtained, instruction was initiated as follows:

1. I arranged (standing) a group in front of the sink and said, "Now I am going to show you how to wash your hair. Keep your eyes on me. Later I will ask you to wash your hair just as I do." I then modeled the entire hair-washing sequence for the group. While I was modeling the task she verbally labeled the component movements. That is, I would say "Now I am rinsing my hair," or "Now I am lathering my hair with shampoo" while she was performing such movements. This procedure was followed on two occasions. Thus, each group had the opportunity to observe I perform the sequence correctly on two consecutive occasions.
2. I selected an S from the group and requested that he or she come to the sink and then said, "Show me how you wash your hair, S." If S performed a step in the sequence correctly, I would say, for example, "That's great!", "You have all your supplies ready!", "Good brushing!".
3. If S performed a step incorrectly or out of order I intervened by stopping S and saying, "No, that is not correct. Do it like this," as I performed the required movements on the S's hair.
4. S was then instructed to repeat the movement modeled by I and then to proceed.
5. If S performed the movement correctly he or she was praised and instructed to proceed to the next step.
6. If S did not respond correctly, I primed S (i.e., physically guided S through the movements) through the correct response and S was then instructed to proceed to the next step.

The following procedural points should be noted at this time:

- A. Priming cues, i.e., physical assistance, were gradually removed until an S could perform a required task without assistance.
- B. Modeling cues were gradually faded until S could perform the task without the assistance of I.
- C. Social praise was gradually faded in that Ss were required to perform more and more steps in the sequence correctly before I would issue praise.

- D. While one S was receiving instruction the remaining Ss in the group were praised for attending and were asked to respond to questions like, "Wasn't that good?" or "Did she do it right?" or "What should she do next?"

Effects of Instruction: Continuous measures of the performance of all Ss were obtained during the baseline and the teaching phases of the program. During the baseline period (trial 1) male Ss could make from 0 to 36 correct responses and female Ss could make from 0 to 46 correct responses. It should be noted that in order for a response to be scored as correct it has to be performed correctly and it has to occur in an acceptable order. Strict adherence to the order delineated in the task analysis was required only if an alternative sequence was unacceptable (e.g., spray head with sprayer, step 31 before step 30, lean head over sink).

During the baseline trial the 19 male Ss made from 3 to 20 correct responses out of a possible 36 ($\bar{X}$ correct = 8.8) and female Ss made from 1 to 15 correct responses out of a possible 46 ($\bar{X}$ correct = 8.8).

Prior to instruction, criterion performance was set at three consecutive errorless trials. By the end of the school year 32 of the 39 Ss reached criterion (14 males and 18 females). The number of training trials required before criterion was reached by the male Ss ranged from 5 to 15 ($\bar{X}$ = 9.7) and by the female Ss ranged from 3 to 19 ($\bar{X}$ = 10.0).

The 7 remaining Ss (2 males and 5 females) did not perform at criterion levels by the end of the school year. On the other hand the 2 male Ss made 30 and 36 correct responses out of a possible 36 on the last training trial and the 5 female Ss made 44, 44, 45, 45, and 45 correct responses out of a possible 46 on the last training trial of the school year.

In an attempt to avoid redundancy only the performance of one S (female) will be graphically depicted in Figure 11. As can be discerned from Figure 11, S-1 made 16 correct responses during the baseline trial and a total of 11 training trials were required before S-1 reached criterion at trial 12.

Part IV: Discussion and Implications

The application of behavioristic task analysis procedures and systematic instructional technology to specified instructional objectives resulted in the development of several home living skills in severely handicapped students.

The students did perform the steps involved in the skills presented to them in the public school classroom environment; the very nature of these skills requires that they be performed other than in the classroom where the teacher model is present. The skills must generalize across

settings into the natural home environment. Some attempt to insure generalization was made by gradually withdrawing (fading) the assistance and reinforcement of the teacher. Other examples of such attempts include taking the students to other settings within the school; e.g., after students had met criterion performance on washing a hairbrush they were taken to two different rooms with stimuli (type of sink, supplies in different areas) re-arranged. There was also an attempt made to have the students observed performing the task in the home environment. A checklist (Appendix E) of steps involved in the washing hair task was sent to the parents when the student had reached criterion performance. The return of checklists was not representative in that only 10 of 32 sent were returned. However, all 10 indicated satisfaction with the performance of the children at home. For any home living skills program to be truly successful, further attempt to insure performance in the students' present and future home environments must be made.

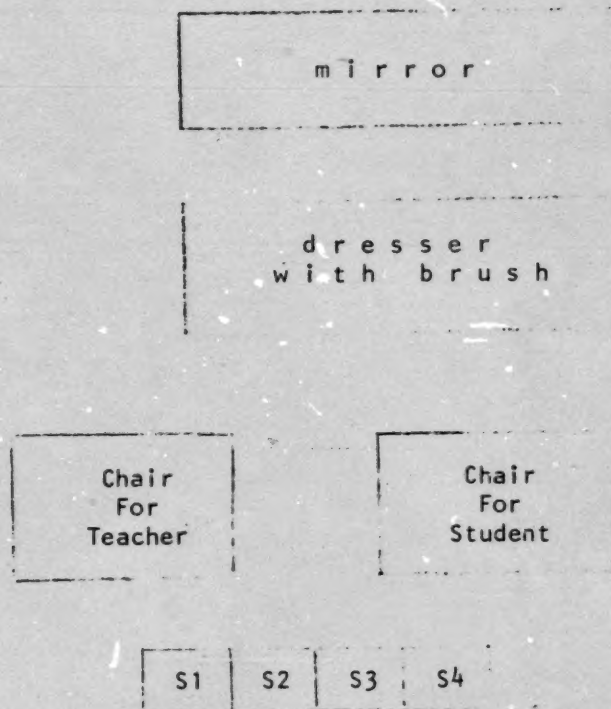
A possible method of better preparing students to perform the skills necessary for independent or semi-independent survival would call for a cooperative public school personnel - parent training program. In this way, parents as well as school personnel could consistently assist and reinforce those steps involved in acquisition of vital skills. Even after skills are acquired, parents and the home environment must repeatedly demand the performance of these skills or they will be lost.

A limitation of the present program, not readily discernible from the results, is the relatively large amount of time spent in teaching the task of washing hair, for example. The results indicate that some students required 19 trials to acquire the skill. Considering the limitations of 45 minute class periods in limited space and with a high pupil-teacher ratio, the task took some students almost seven months to acquire. Because of the large number of home living skills to be taught, these limitations would need to be reduced or eliminated in future programs. If the programming did indeed begin at age 5 or earlier, instead of in adolescence, a great time element could be eliminated. Many aspects of the program are, at the time of this writing, being implemented with lower age children in the same public school setting.

Not all of the tasks delineated in Part I have presently been analyzed and taught. It is our hope that further task analyses will be completed and presented in the classroom in the near future by those currently involved and by other school personnel, especially those involved in instructing lower age students.

APPENDIX A

Instructional Arrangement for Brushing Hair



Students in Chairs

APPENDIX B

Data Sheet for Brushing Hair

+ = correct response

P = performance error (incorrect response)

0 = order error (incorrect response)

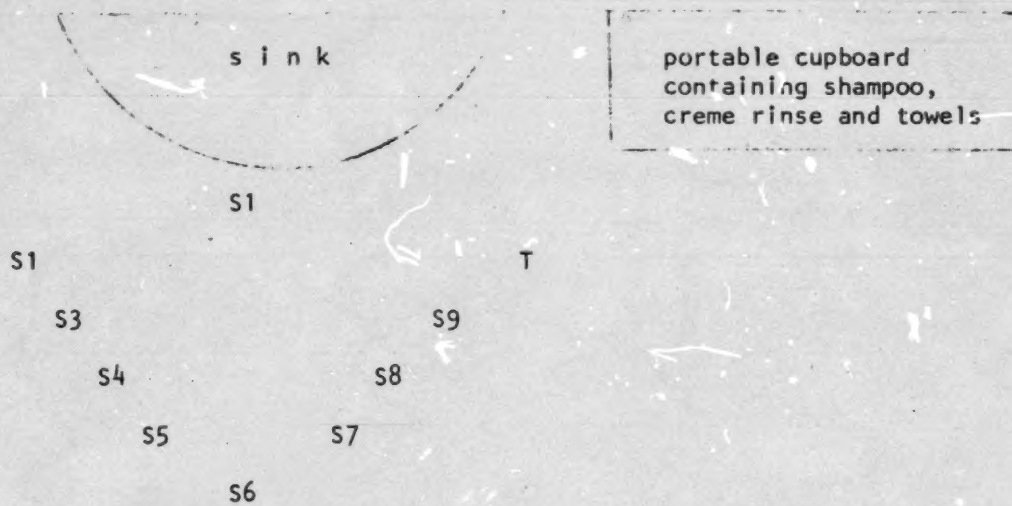
Group _____

Date _____

Students	Pick up brush	Look at hair in mirror	Start brush at front top	brush down at least 6 strokes around head	Do not comb hair over part	Check brushed hair in mirror	Total correct
Joe							
Mike							
Alice							
Sue							
Joe							
Mike							
Alice							
Sue							

APPENDIX C

Instructional Arrangement for Washing Hair



Students and teacher standing

shelf-top
with brushes

APPENDIX D

Data Sheet for Washing Hair

+ = correct response

P = performance error (incorrect response)

O = order error (incorrect response)

Group _____

Date _____

Students

	Mary	Jeff	Paula	Mike	Chris	Gary	Judy	Pat	Craig
1. Secure brush, shampoo, creme rinse (girls), towel									
2. Arrange all supplies next to sink									
3. Pick up brush in preferred hand									
4. Brush through hair all around head									
5. Lay brush next to sink									
6. Turn on hot & cold water faucets									
7. Test water temp. (warm) with fingers									
8. Lean head over sink									
9. Spray over entire head with sprayer									
10. Turn off both faucets									
11. While leaning over sink, uncap shampoo									
12. Fill cap with shampoo									

Students

	Mary	Jeff	Paula	Mike	Chris	Gary	Judy	Pat	Craig
13. Pour capful of shampoo into palm of hand									
14. Lay shampoo cap next to bottle									
15. Using both hands, rub shampoo into hair over entire head									
16. Using both hands, work up lather over entire head									
17. Turn on hot & cold water faucets									
18. Test water temp. (warm) with fingers									
19. Lean head over sink									
20. Spray over entire head with sprayer									
21. Rinse out all soap									
22. Turn off hot & cold water faucets									
23. Pick up shampoo cap									
24. Pour capful of shampoo into palm of hand									
25. Put shampoo cap on bottle									

Students

	Mary	Jeff	Paula	Mike	Chris	Gary	Judy	Pat	Craig
26. Use both hands, rub shampoo into hair over entire head									
27. Using both hands, work up lather over entire head									
28. Turn on hot & cold water faucets									
29. Test water temp. (warm) with fingers									
30. Lean head over sink									
31. Spray over entire head with sprayer									
32. Rinse out all soap									
33. Turn off hot & cold water faucets									
Girls using creme rinse omit steps 34-36 at this point									
34. Using both hands, squeeze out excess water from hair									
35. Pick up towel									
36. Rub towel over hair to soak up excess moisture									
Follow steps 34-46 for girls using creme rinse									
34a. Uncap creme rinse									
35a. Pour appropriate amt. of creme rinse into palm of hand									

Students

	Mary	Jeff	Paula	Mike	Chris	Gary	Judy	Pat	Craig
36a. Using both hands, rub creme rinse into hair over entire head									
37. Put cap on creme rinse									
38. Turn on hot and cold water faucets									
39. Test water temp. (warm) with fingers									
40. Lean head over sink									
41. Spray over entire head with sprayer									
42. Rinse out all creme rinse									
43. Turn off hot and cold water faucets									
44. Using both hands, squeeze out excess water from hair									
45. Pick up towel									
46. Rub towel over hair to soak up excess moisture									

APPENDIX E

Parent Checklist for Washing Hair

Dear Parents:

It is very important that a student can perform the skills learned in "home living skills" class at home. To determine if your child is correctly performing the skill of washing his own hair at home, please fill out the attached sheet as soon as possible and return to me. This will be a great help to me, to your child, and hopefull/ to you.

I appreciate your cooperation.

Sincerely,

Sue Hamre

Enclosure

Child's Name _____

Date Observed _____

Name of Person Observing _____

Instruct your child to "show me how you wash your hair" and make sure he knows where you keep the supplies. Place a ✓ in the correct column and make any additional comments that seem necessary; check "yes" if your child can perform the step without any help; check "no" if he needs help.

Steps	Yes	No	Comments
1. Get out brush, shampoo, creme rinse (girls only) and towel?			
2. Brush through hair around head?			
3. Rinse all hair with (preferably warm) water?			
4. Lather all hair with shampoo?			
5. Rinse out all soap with (preferably warm) water?			
6. Lather all hair again with shampoo?			
7. Rinse out all soap with (preferably warm) water?			
8. BOY: Towel-dry hair?			
8a. GIRL: Rub creme rinse all over hair?			
9. Rinse out all creme rinse with (preferably warm) water?			
10. Towel-dry hair?			

Signed _____

FIGURE I

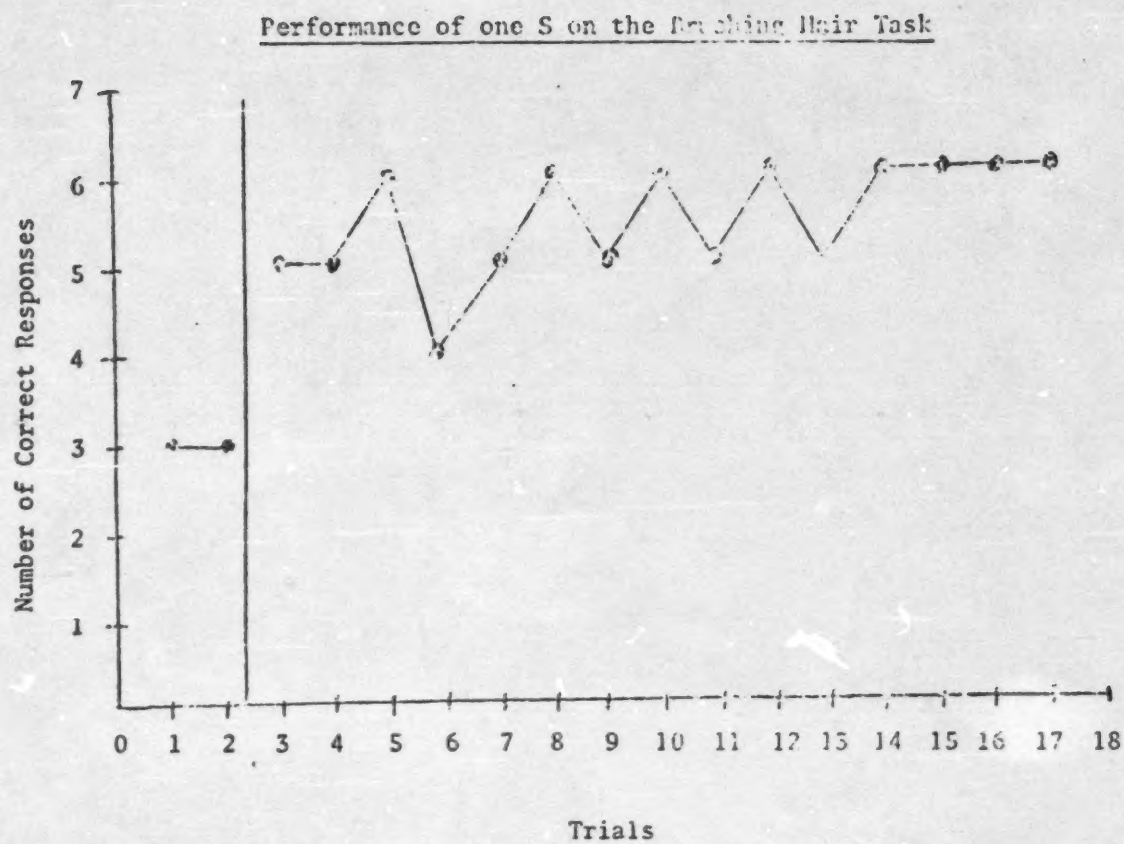
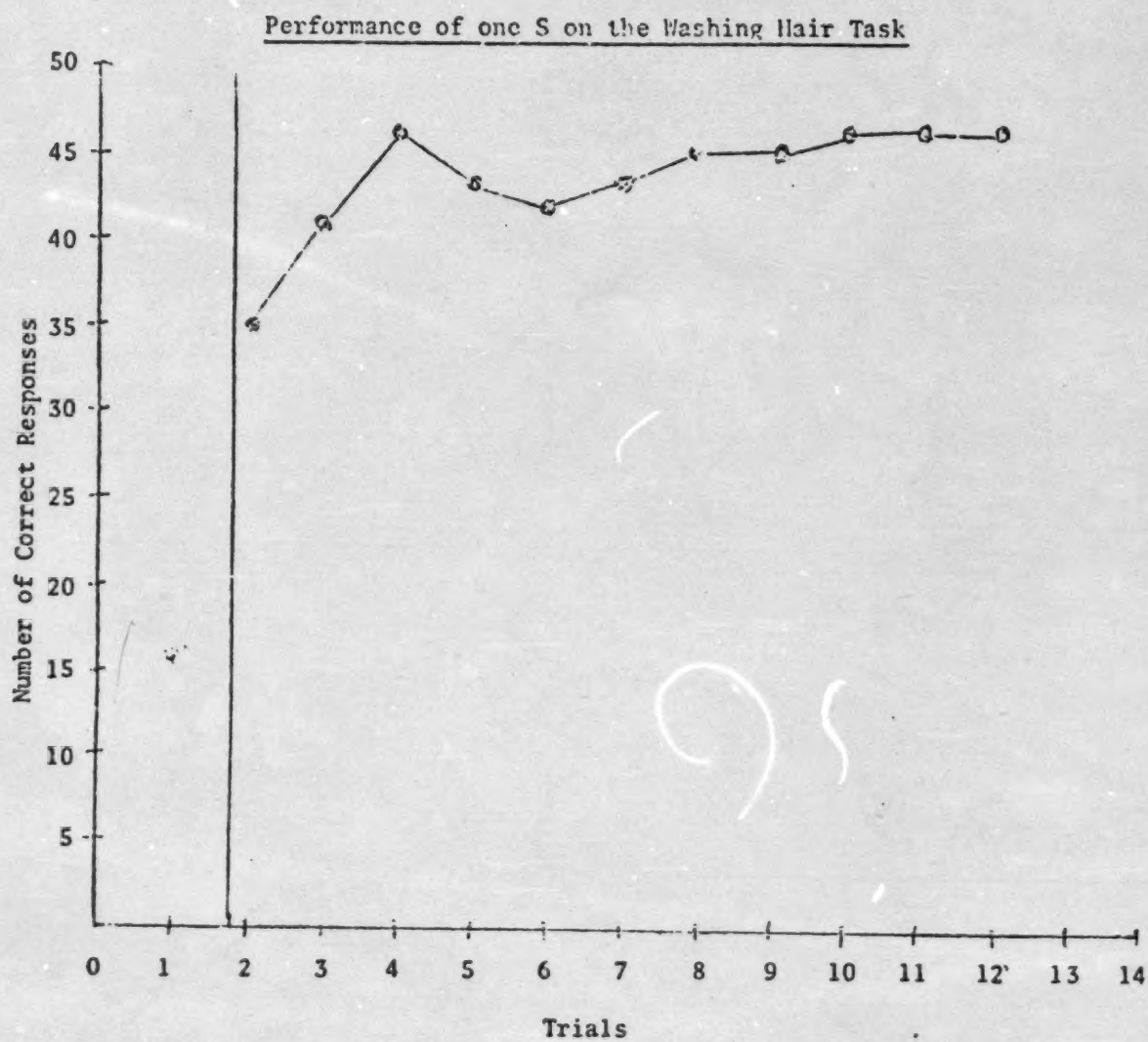


FIGURE II



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